Research Assistant with FDA (BS, MS)

Job description

A position of a Research Assistant (B.S. or M.S. level) is available at Food and Drug Administration (FDA), Center for Devices and Radiological Health (CDRH), Office of Science and Engineering Laboratories (OSEL). The position is located at FDA White Oak main campus in Silver Spring, MD. Program participants will be paid a monthly stipend that is dependent on experience (GS-7, GS-8 or $43,057 to $50,000 per year). Funding is currently available for 1 year with the possibility of extension. The candidate must have received his/her most recent degree within 5 years prior to starting. The applicant has to be eligible to work in the U.S.

Project description

Neuroprosthetics enables patients with upper limb amputations or paralysis to regain lost motor functions. One of the challenges for this technology is reliability of neural implants that establish interface between peripheral nervous system and external prosthetic devices. The focus of this project is to facilitate development of reliable neural implants by providing a platform for rapid in vitro evaluation of their durability. The project is a part of DARPA Hand Proprioception and Touch Interfaces (HAPTiX) initiative [1] and involves close collaboration with neural implant developers across the country. The reliability testing will be performed using Reactive Accelerated Aging (RAA) protocol developed in the lab earlier [2] with results of this study to be published in peer-reviewed literature.

Role of candidate

The successful candidate will be focused on automation and maintenance of RAA system; running experiments with neural implants in RAA system; characterization of neural implants with electrochemical impedance spectroscopy; electron and optical microscopy and other techniques; data analysis and processing; preparing reports, presentations and scientific publications.

The qualified candidate should have B.S. or M.S. degree in chemistry, biomedical engineering or chemical engineering. Preference will be given to applicants with some or all of the following skills and experience:

- Prior research experience (such as analytical and wet chemistry lab techniques)
- Ability to work independently, troubleshot and creatively solve technical problems
- Critical thinking and ability to work with scientific literature
- Experience with electrochemical impedance spectroscopy, electron microscopy and maintenance for these instruments
- Experience in programming/process automation
- Experience in basic design of system components (to work with a machine shop)
- Data processing/plotting skills (Matlab, Python, MS Excel)
- Image processing skills (graphic software, ImageJ)
- Excellent writing/communication skills

How to apply

To apply, please email at Pavel.Takmakov@fda.hhs.gov including CV/resume with a cover letter in the body of the email and "FDA Research Assistant - Reliability of Neural Implants" as a subject line. The position is available immediately.

Note that this appointment is offered through the CDRH Postgraduate Research Participation Program and is administered by the Oak Ridge Institute for Science and Education (ORISE). The program is open to all qualified U.S. and non-U.S citizens without regard to race, color, age religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran. The individual selected for appointments will not become employees of ORISE, ORAU, DOE, FDA, CDRH, or any other office or agency.

Company description

The Food and Drug Administration (FDA) is an agency within the U.S. Department of Health and Human Services. FDA is responsible for protecting the public health by assuring the safety, efficacy and security of human and veterinary drugs, biological products, medical devices, our nation's food supply, cosmetics, and products that emit radiation. This position is within the Center for Devices and Radiological Health (CDRH). CDRH seeks to assure that patients and providers have timely and continued access to safe, effective, and high-quality medical devices. CDRH facilitates medical device innovation by advancing regulatory science, providing industry with predictable, consistent, transparent, and efficient regulatory pathways, and assuring consumer confidence in devices marketed in the U.S.

The Office of Science and Engineering Laboratories (OSEL) is the research arm of the Center for Devices and Radiological Health (CDRH). OSEL performs product testing; develops reliable standardized test methods for CDRH and industry use; performs anticipatory scientific investigations on emerging technologies; contributes laboratory data to national and international standards used in CDRH decision making; provides scientific and technical training for CDRH staff members; and maintains laboratory collaborations and relationships with scientific researchers in academia and other Federal laboratories. OSEL also coordinates and oversees CDRH's activities that support the development of national and international standards.

References:

1. http://www.darpa.mil/program/hand-proprioception-and-touch-interfaces
2. P. Takmakov, K. Ruda, K. S. Phillips, I. S. Isayeva, V. Krauthamer, and C. G. Welle, "Rapid evaluation of the durability of cortical neural implants using accelerated aging with reactive oxygen species," J. Neural Eng., vol. 12, no. 2, p. 26003, 2015.